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EXAMINER

COLBERT, ELLA

ART UNIT	PAPER NUMBER
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3624

DATE MAILED: 04/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/892,161

Applicant(s)

OHRAN, MICHAEL R.

Examiner

Ella Colbert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2 and 4.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. Claims 1-39 are pending.
2. The Pre-Amendment A filed 06/25/02 has been entered as paper no. 3.
3. The IDS submitted 01/29/02 has been entered as paper no.2.
4. The IDS submitted 08/20/03 has been entered as paper no. 4.

Specification

5. The abstract of the disclosure is objected to because In the Specification , page 3, line 21 and page 4, line 1, figure 1, element "102" is referenced as "user workstation" and in the drawing figure, element "102" is labeled "102a, 102b, 102c, and 102n". Does Applicant mean "user workstations 102a, 102b, 102c, and 102n"? The drawing figure 1, elements 115, 125, and 135 are not found or mentioned in Applicants' Specification. Figure 3, page 16, line 3 references "user workstations 302". The drawing figure 3 labels "user workstations" as 302a, 302b, 302c, and 302n". Figure 5, page 25, line 3 references "server A 520". The drawing figure 5 labels "server A as "510". Figure 6 and Figure 7 "dedicated link" is referenced as "dedicated line 315" on page 17, line 22, page 19, lines 22 and 24, page 20, lines 3 and 6, page 21, line 2, and page 23, line 2. Drawing figures 6 and 7 label "dedicated link" as "615". The Specification on page 20, line 14 references "user workstations 302a-n". Drawing figure 6 labels "workstation" as 302a, 302b, 302c, and 302n." Page 22, line 16 and page 23, line 20 has a similar problem. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-4, 7-9, 11, 14, 16-20, 26, 28-31, 33, and 36-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-4, 7-9, 11, 14, 16-20, 28-31, 33, and 36-39 recite "the acts of" or "the act of". The appropriate recitation (ex. "comprising:", "wherein transmitting", "wherein executing", "further comprising:", and "wherein using", etc.). Claim 1, recites "In a network that includes ...". This would be better recited "A network including ... comprising:". Claims 9, 16, and 28 have a similar problem. Claim 8 recites "... request, wherein, from the standpoint of the I/O driver, the write request virtually appears to have been stored ...". This claim limitation would be better recited "... request, wherein from the I/O driver, the write request appears to have been stored ...". Claims 9 and 29 have a similar problem. Claim 16 recites "In a first server ..., included in a network that also includes a second server ..., ..., comprising:". This claim would be better recited "A first server in a network including a second server ..., ..., comprising:". The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Correction is required.

8. Claims 1, 9, 16, and 20, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention Claim 1, lines 1-14 recites "executing the copy

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of the write request at the second server ..., wherein the data, from the standpoint of the first server and the second server, virtually appears to have been stored in a shared storage node ...". This claim limitation is vague, unclear and confusing. Claim 9 has a similar problem in lines 6-11, claim 16 in lines 13-18, and claim 20, lines 12-18. The problem is in the wording of the claim language making the claim limitation vague, unclear, and confusing.

9. Claims 1, 16, and 28 do not say where the write request comes from prior to being received at the first server. Do Applicants' mean the write request comes from the network or from a user workstation or a client?

10. Claim 26 contains a conditional statement reciting "... in response to a write request if and only if the write request has priority over any write request ...". The claim does not say what happens if the write request does not have priority over any other write request ...".

Applicants' are respectfully requested to review the claims in the references submitted with this Office Action for the proper drafting of claims.

11. Claims 1, 9, 16, and 28 are rejected under 35 U.S.C 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants' regard as the invention. In particular

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A. Claims 1, 9, 16, and 28 are not sufficiently precise due to combining of two separate statutory classes of invention in a single claim. The preamble of the claim refers to a system (ex. network, server, and mass storage device), then the preamble refers to a method (mirroring stored data) and the body of the claim begins by discussing the specifics of the method steps of a storage area network (ex. receiving a request and executing a write request) and subsequently the claim then deals with the specifics of a system (ex. using a mirror engine and a second mass storage device) in a storage area network.

B. Claims 2-8, 10-15, 17-19, and 29-39 are rejected as being dependent on claims 1, 9, 16, and 28 as discussed above.

Claim Rejections - 35 USC § 101

12. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

13. Claims 1-19 and 28-39 the claimed invention is directed to non-statutory subject matter.

35 USC 101 requires that in order to be patentable the invention must be a "new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" (emphasis added). Applicants' claims mentioned above are intended to embrace or overlap two different statutory classes of invention as set forth in 35 USC 101. The claim begins by discussing a system then a method (ex. Preamble of claim 1), the body of the claim discusses the specifics of the method steps of establishing a storage area network, and subsequently the claim then deals with the

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specifics of a system for using a mirror engine and a mass storage device (see above rejection of claims under 35 USC 112, second paragraph, for specific details regarding this issue). Claim 9 begins by discussing a system and then a method (Preamble of claim 9), the body of the claim discusses the specifics of a system (a establishing a virtual storage network and transmitting a copy of the write request), and subsequently the claim then discusses the specifics of a method (the steps) of receiving a write request and writing the data. Claim 16 begins by discussing a system then a method (Preamble of claim 16), the body of the claim discusses the specifics of a method (receiving a write request and using a policing protocol module), and subsequently the claim discusses the specifics of a system (executing the write request and using a mirror engine). Claim 28 begins by discussing the specifics of a system and then a method (Preamble of claim 28), the body of the claim discusses the specifics of a method (receiving a write request and executing the write request), and subsequently the claim discusses the specifics of a system (transmitting the write request)(see above rejection of claims under 35 USC 112, second paragraph, for specific details regarding this issue). "A claim of this type is precluded by the express language of 35 USC 101 which is drafted so as to set forth the statutory classes of invention in the alternative only", Ex parte Lyell (17 USPQ2d 1548).

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by (US 5,157,663) Major et al, hereafter Major.

As per claim 20, Major teaches, A virtual storage area network that enables a first server and a second server to access the same data from physically different mass storage devices, the virtual shared access network comprising: a first server that is capable of receiving write requests and read requests from network clients, the first server having: a first mass storage device; and a first mirror engine (col. 2, lines 11-13, col. 6, lines 13-16, and figure 1 (21); a second server that is capable of receiving write requests and read requests from network clients, the second server having: a second mass storage device; and a second mirror engine (col. 1, lines 66-68 and col. 2, lines 1-3); and a means for communicating between the first mirror engine and the second mirror engine that enables the first mirror engine to mirror to the second mass storage device first data that is also to be written to the first mass storage device and that further enables the second mirror engine to mirror to the first mass storage device second data that is also to be written to the second mass storage device, thereby enabling the first server and the second server to access the same data from physically different mass storage devices (col. 2, lines 54-63, col. 5, lines 39-52, col. 6, lines 39-48, col. 7, lines 2-3, and figure 1 (22)).

As per claim 21, Major teaches, A virtual storage area network as recited in claim 20, wherein the means for communicating comprises a dedicated link between the first mirror engine and the second mirror engine (Figure 1 (15A-15B)).

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As per claim 22, Major teaches, A virtual storage area network as recited in claim 20, wherein the means for communicating is included in infrastructure of the network, wherein the infrastructure is also used by the network to transmit data between workstations and servers (col. 4, 19-31, figure 1 (64-bus and 65-bus, 44A and 44B-workstations, 23- network, and 21 and 22- servers).

16. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Major in view of (US 5,276,867) Kenley et al, hereafter Kenley.

As per claim 23, Major failed to teach, A virtual storage area network as recited in claim 20, further comprising a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device. Kenley teaches, a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device (col. 2, lines 44-55 and col. 4, lines 61-66); and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device (col. 6, lines 40-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the

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third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device and to modify in Major because such a modification would allow Major to have a third server as a backing store (hierarchical storage server that has a higher capacity and lower speed than the secondary storage and can include erasable optical, write-once-read-many (WORM) disks, or tape volumes.

As per claim 24, Major failed to teach, A virtual storage area network as recited in claim 23, further comprising means for communicating between the third server and the first server and also between the third server and the second server. Kenley teaches, a means for communicating between the third server and the first server and also between the third server and the second server (col. 7, lines 51-62). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a means for communicating between the third server and the first server and also between the third server and the second server and to modify in Major because such a modification would allow Major to have the backing storage (third server) to have control for the backup system by using a baseline backup and an incremental backup.

As per claim 25, Major teaches, A virtual storage area network as recited in claim 20, wherein the first server and the second server execute a policing protocol to determine whether a server, upon receiving a write request, has write access priority for writing data to the first mass storage device and the second mass storage device (col. 2, lines 42-63 and col. 6, lines 39-48).

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As per claim 26, Major teaches, A virtual storage area network as recited in claim 25, wherein the policing protocol enables the first server and the second server to write data to a particular portion of the first mass storage device and the second mass storage device in response to a write request if and only if the write request has priority over any other write request that might be pending for the particular portion of the first mass storage device and the second mass storage device (col. 6, lines 51-67 and col. 7, lines 1-10).

As per claim 27, Major teaches, A virtual storage area network as recited in claim 25, wherein: the first server further has a first policing protocol module (col. 8, lines 21-68 and col. 9, lines 1-15); and the second server further has a second policing protocol module, wherein the first policing protocol module and the second policing protocol module are used together to execute the policing protocol (col. 9, lines 17-68 and col. 10, lines 1-43).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Slomecenski et al (US 5,241,672) disclosed file updates to reboot after a crash.

Rawlings, III (US 5,987,627) disclosed high-speed mass storage access.

Pitts (US 5,611,049) disclosed Network distributed caches ("NDCs") that access datasets.


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Inquiries

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ella Colbert whose telephone number is 703-308-7064. The examiner can normally be reached on Monday-Thursday from 6:30 am -5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin can be reached on 703-308-1038. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


E. Colbert
April 27, 2004